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The Corps Environment

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Vision to Action

Artwork shows how sustainable communities work

By Nancy Porter
Headquarters USACE

A joint U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (EPA) tool continues to help capture and integrate individual and community visions of how sustainable communities should look.

Corps "Visioneers" James Waddell and Olice Carter, of the Corps' South Atlantic Division; Susan James, Northwest Division; Shea Jones, EPA Region 4; and Denise Hewes, an engineering student at Georgia Tech; facilitated a Vision to Action workshop June 28 in Clarkston, Ga., as part of DeKalb County's Second Annual Stormwater Management Symposium.

Vision to Action/ Multi-Vision Integration involves an innovative interview and visualizing technique to capture and integrate individual and community visions using the art produced by individuals and supported by impartial professional artists and facilitators knowledgeable of sustainable development and the Corps' Environmental Operating Principles. Vision to Action is geared to occur within a more open community forum with the goal to first listen and obtain diverse individual visions and

"A little rain is a good thing, however too much can be trouble, especially in backyard streams", captions this piece of art which displayed at a Vision to Action workshop.

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Harmful algae poses potential risks

By Jennifer Sowell
Portland District

The heat of summer usually drives many people to their favorite swimming holes. Unfortunately, a colorful scum may have kept them out of the refreshing water. Lakes and reservoirs tend to have what are commonly known as blue-green algae blooms, and they typically occur during the prime summer months. But what are these blue-green algae blooms and why should people steer clear of the water they bloom in?

Algae are naturally-occurring organisms that are found in every type of water all over the world. They are very important to marine and fresh-water ecosystems, supplying nutrients through the food chain. There are hundreds of thousands of species of algae in the world, most of which are not harmful.

However, there are also harmful types of algae, including several species of blue-green algae, or cyanobacteria. These particular types of harmful algae are actually not algae at all. They resemble algae in almost every way, but the main difference is in their cellular makeup.

"Structurally, blue-green algae are bacteria, and species are classified based on their structural attributes," said Deanna Connors, public health toxicologist with the Oregon Department of Human Services (ODHS). "Functionally, however, they behave like algae so it makes sense to treat them like algae."

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NOTE: The domain name for the Environmental Community of Practice has changed to: https://environment.usace.army.mil.

Inside this issue:

Corps, NOAA deploy 'smart buoy' near famous site explored by Captain John Smith

By Gerald Rogers
Norfolk District

The U.S. Army Corps of Engineers, Norfolk District's joint effort with the NOAA deploy the nation's latest "smart buoy" in the Chesapeake Bay. *(Photo by Gerald Rogers)*

The crew of the Norfolk District's Derrickboat *Elizabeth* and National Oceanic and Atmospheric Administration oceanographers deployed the nation's latest "smart buoy" at the mouth of the Rappahannock River in Virginia July 19.

As part of the Chesapeake Bay Interpretive Buoy System, or CBIBS, the smart buoy collects weather, oceanographic and water-quality observations and transmits this data — along with historical and cultural information about the bay— wirelessly in near-real time.

CBIBS is the only operational buoy system in the bay dedicated to maintaining the broad range of measurements necessary to track bay restoration progress.

"These smart buoys are an example of NOAA's advancements in Earth-observing systems," said Mary Glackin, deputy under secretary of commerce for oceans and atmosphere. "NOAA is working to improve our understanding of dynamic coastal areas like the Chesapeake Bay and how areas like the bay are affected by changes in the global ocean."

This is the fourth smart buoy NOAA has launched to mark the Captain John Smith Chesapeake National Historic Trail, America's first national water trail. The 3,000-mile trail migrates through parts of Virginia, Maryland, Delaware and the District of Columbia, along the Chesapeake Bay and its tributaries. The trail transits routes taken by Captain John Smith in 1607 and 1608 to chart the land and waterways of the Chesapeake Bay. The trail highlights the natural history of the bay and provides new opportunities for recreation, education and tourism in the Chesapeake Bay region, and encourages stewardship of this national treasure.

Last spring, the Corps' *Elizabeth* crew also teamed with NOAA on its maiden launch of the first CBIBS buoy in the James River, near historic Jamestown, Va., as part of the 400th anniversary celebration of the founding of the Jamestowne Settlement.

The Norfolk District *Elizabeth* crew and NOAA oceanographers perform final checks before launching the smart buoy. (*Photo by Gerald Rogers)*

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Smart Buoy

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During the first smart buoy launching, the *Elizabeth's* crew used the vessel's huge crane to position the two-ton buoy within five feet of the predetermined global coordinates.

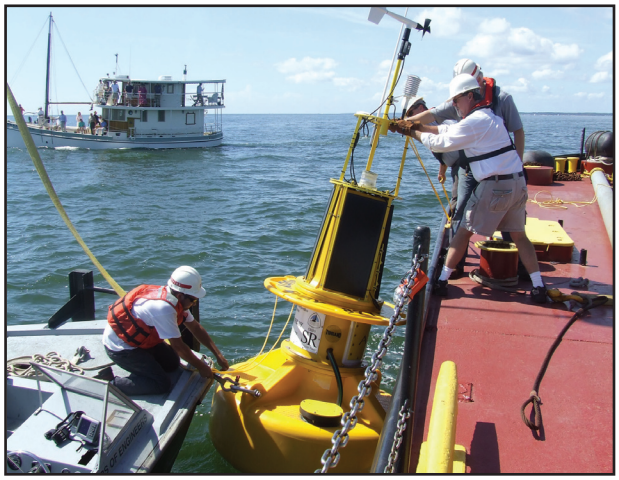
"I don't know if we are going to be able to find another crew for the other buoys, with as much knowledge and professionalism that this one on the *Elizabeth* has," said Doug Wilson, program manager of the NOAA Chesapeake Bay Office's Integrated Coastal Observations Program.

This fourth buoy deployment off Stingray Point in Deltaville, Va., also went without a hitch; the *Elizabeth* crew positioned the buoy right on top of NOAA's global coordinates.

The placement also marked the 400th anniversary of Captain John Smith's exploration of the region. In July 1608, while using a sword to fish in shallow waters near the mouth of the Rappahannock River, Smith was stung by a stingray and nearly died. The peninsula where this incident occurred was later named Stingray Point.

During the Stingray Point smart buoy launching, director of the NOAA Chesapeake Office Peyton Robertson joined Rep. Robert Wittman and other officials on a nearby observation boat.

"Our partners, the Army Corps of Engineers, once again played a critical role in launching these smart buoys on time and on target," Robertson said. "We appreciate their support of the Chesapeake Bay Interpretive Buoy System."



The joint team begins the smart buoy deployment sequence. *(Photo by Gerald Rogers)*

The *Elizabeth's* Captain Richard Bruton said he felt privileged to team with NOAA on a project that will help restore the health of the Chesapeake Bay watershed.

The *Elizabeth* crew: Bruton, Dennis Barnes, Stan Caldwell, Glen Boykin, Pete Jeffers and Erik Sherer are set to team with NOAA to launch a fifth smart buoy on the Elizabeth River in Norfolk, Va., in September.

These buoy measurements can be publicly accessed at www.buoybay.org and by phone at 877-BUOY-BAY (877-286-9229).

More stories available online

Internet exclusive stories for this issue are:

- Marsh cleanup completed well ahead of schedule
- Models forecast damages to prepare teams well before hurricane landfall
- Secretary of Defense honors district environmental restoration project
- Federal, state officials mark completion of Town Pond environmental restoration project in Portsmouth
- Memphis District using retrieved snags to improve fish habitat
- 'Building green' creates healthier environments, improves employees' health, comfort
- National Conference on Ecosystem Restoration

These articles are located at: https://environment.usace.army.mil

Vision to Action

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assessments, and then integrate them into a regional or community vision.

The Visioneers introduced the 26 participants to the Vision to Action/ Multi-Vision Integration objectives, followed by presentations from successful workshops ranging from Selma and Valley, Ala., to the restoration of Indian Creek in Caldwell, Idaho.

Artist's renderings from past workshops created the visual incentive to entice attendees to draw their sustainable visions. The attendees then shared their visions with the DeKalb County Stormwater Symposium planners, volunteers and cooperating partners.

The participants' drawings inspired public input to the Corps' Mobile District's General Investigation Studies for Stream Restoration in DeKalb County. While a little rain is a good thing, too much can be trouble, especially in backyard streams.

Team members from the Mobile district are working with DeKalb County officials to address local streams that need help with water quality and habitat restoration. Mobile District team members participating in the Vision to Action workshop included Dean Trawick, a project manager/ planner; Katie Burge, a biologist; and Scott Chodkiewicz, a hydraulic engineer. Prior to the actual Vision to Action session, Jamie Miller, an environmental scientist for Tetra Tech, presented an overview of the findings of the study, which helped to set the stage for visioning.

"This exercise was successful in engaging public views and interest and should be incorporated into every early feasibility workshop to secure early public involvement in water resource projects," Trawick said.

DeKalb County citizens are facing an increasingly acute and complex set of stormwater infrastructure challenges as the county continues to grow and prosper. An effective stormwater management and infrastructure system is required to protect properties from flooding, to preserve and enhance the environmental quality of area watersheds and to comply with National Pollutant Discharge Elimination System requirements.

DeKalb County Stormwater Program Supervisor Mike Walker introduced the session and participated along with other county employees.

"The visioning exercise was interactive and brought a level of ownership to the process. I am surprised that you all have not won an award for this presentation," said Lisa-Marie Glover, a county transportation planner.

"As a transportation planner, I have facilitated these types of meetings in the past on transportation projects. I must say this was exceptional! I really enjoyed how the artist was able to take everyone's ideas and incorporate them into an overall picture of what everyone desires," Glover said. "I also enjoyed how individuals were allowed to tell a story about their pictures and later their posters."

Integrating water resources into community visioning is a common and connecting theme throughout Vision to Action workshops. Visions of bike and walking paths, canoes making their way down a river, or picnic areas along the riverbanks usually define the social aspect of community drawings. Vibrant neighborhoods offering restaurants and outdoor dining often appear in a community's vision as well as lofts above businesses and the ability to walk or bike to work are other common themes expressing what a community envisions as important.

During the past two years, 15 communities have participated in Vision to Action workshops. Communities located along a river reach are good candidates to demonstrate the Multi-Vision aspects, benefits in a water basin and the interconnectivity of communities located in the water basin.

Vision to Action/Multi-Vision Integration workshops present a forum to allow information sharing and briefings from various state, federal and local agencies leading to a cohesive community vision and revitalization. These sessions create a potential for partnerships and positive image enhancement of the Corps through waterway-related projects.

Vision to Action/Multi-Vision Integration is collaborative effort between the Corps' South Atlantic Division and EPA Region 4. EPA Region 4 funded the development of the tool as a community involvement initiative to encourage and empower individuals to be proactive at the local and regional level and take personal responsibility for immediate action in the sustainable revitalization of their communities. Vision to Action/Multi-Vision Integration made its debut at the 2003 Brownfields Conference in Portland, Ore. Since then Vision to Action has become a regular hands-on exhibit at the Brownfields national conferences.

More information can be found at: http://www.epa.gov/ciconference/previous/2007/myvision.htm or by viewing a video and PowerPoint presentation at: https://environment.usace.army.mil/tools_info/.

To schedule a Vision to Action workshop, contact Jim Waddell, South Atlantic Division, at 404-562-5270.

Cochiti Pueblo, Corps sign historic agreement

By Bruce Hill
Albuquerque District

The U.S. Army Corps of Engineers Albuquerque District signed an historic cooperative agreement with the Cochiti Pueblo on June 17, 2008 allowing the Tribe to participate in managing the overall operations at the Cochiti Lake Area.

The agreement, which excludes management of the federally-operated dam, comes after many years of sacrifice by the Pueblo, including elements of its culture and agricultural way of life that were impacted to the point of being nearly lost after construction of the dam.

Cochiti Dam, completed in 1975, was designed by the Corps as a flood risk management structure, to reduce the effects of flooding in Albuquerque, retain sediment and provide recreational opportunities. Constructed on Cochiti Pueblo land, including some of the Pueblo's best agricultural bottomland, nearly an entire generation did not have the same opportunities as their Tribal forefathers to practice farming, a focal point for the Pueblo's way of life and culture.

"Water seepage (from the dam) destroyed most of the farming land," said Joseph Henry Suina, Cochiti Pueblo Tribal councilman. "A quarter of a century of farming and culture was lost, affecting an entire generation of children. We are desperately trying to get back our way of life and teach our children to pass on our traditions.

"Together with the Corps, we can help each other out," he said.

The new agreement was signed by The Honorable John Paul Woodley Jr., assistant secretary of the Army for civil works, The Honorable Joseph Ernest Suina, Cochiti Pueblo governor; The Honorable Michael Pecos, Cochiti Pueblo lieutenant governor; and Lt. Col. Bruce A. Estok, commander of the Corps' Albuquerque District. This agreement would not have been possible without the support of the New Mexico Congressional Delegation.

"When I first heard of the Pueblo's concerns, I recognized we are long overdue in acknowledging the sacrifice of Cochiti Pueblo that was against their will," Woodley said. "I am deeply touched and moved by the wisdom spoken by you here today."

"In 2007, Congress authorized the Corps to enter into Cooperative Agreements with Native American Tribes in New Mexico on whose lands Corps' flood risk management facilities are located," said Ron Kneebone, Ph.D., Corps of Engineers Tribal liaison. "This includes Santa Ana and Santo Domingo pueblos as well as the Pueblo de Cochiti. The purpose of the agreements is to establish a mechanism for paying the Tribes for activities they may carry out in support of dam and reservoir operations.

"The benefit of such Cooperative Agreements is their recognition of the government-to-government relationship between the federal agency and the Tribe," he said.

Hon. Michael Pecos, Cochiti Pueblo lieutenant governor, left; Hon. John Paul Woodley Jr., Office of the Assistant Secretary of the Army for Civil Works; Hon. Joseph Ernest Suina, Cochiti Pueblo governor; and Lt. Col. Bruce A. Estok, the Albuquerque District commander for the Corps, sign an historic cooperative agreement that will allow Cochiti Pueblo to be more actively involved in Cochiti Lake operations. *(Photo by Bruce Hill)*

Over the past 12 years, the Corps has made a concerted effort to make amends with the Pueblo. Members of the Cochiti Pueblo who experienced the decline of their customs and practices are today welcoming the efforts of the Corps. Through collaborative decision-making efforts with the Pueblo, the Corps will, in-turn, strive for win-win situations that allow the Corps to accomplish its public service mission of flood risk management while being responsible environmental stewards.

"I cannot express my thankfulness for the commitment the Albuquerque District has made," said Jacob Pecos, director for the Department of Natural Resources and Conservation at Cochiti Pueblo. "We look forward to a prosperous relationship."

Algae

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When conditions are right, including factors such as weather and nutrient load of the water, cyanobacteria multiply and accumulate rapidly, causing a bloom. Because cyanobacteria bloom and photosynthesize like algae, they are considered a harmful algae bloom. These harmful algae blooms (HABs) can clog bodies of water and turn them a variety of colors, from blue-green to reddish-brown, diminishing the water quality and posing potential health risks due to the toxins that some species produce. HABs have caused lake closures, death of wildlife and illness in humans.

HABs appear to be increasing along the coastlines and in the surface waters of the U.S., according to the National Oceanic and Atmospheric Administration. Portland district reservoirs are no exception. Algae blooms have plagued reservoirs in the district for decades, although they haven't always necessarily been harmful algae blooms. While the district water quality section has been studying and monitoring HABs and other algae blooms for just as long, the rest of the district had become increasingly concerned with HABs in the last two years.

In 2001, the U.S. Forest Service issued a warning strongly discouraging contact with the water at their Diamond Lake due to a large, persistent harmful algae bloom. This action got the attention of park rangers at the Corps' Lost Creek Reservoir, motivating them to study the issue and begin taking a closer look at the popular lake.

"Our awareness of the issue has grown because of the effects of harmful algae blooms seen at nearby lakes," said Jim Buck, Rogue River Basin Projects.

A bloom in Lost Creek Reservoir in 2006 colored the water blue as if paint had been spilled, an effect often seen with harmful algae blooms. *(Photo by Corps of Engineers)*

Scientists do not yet understand fully how HABs affect human health. Authorities and experts around the world are monitoring HABs and developing guidelines for HAB-related public health action.

Again, Portland district is no exception. While rangers closely studied the issue at the project, a push to develop a district-wide plan for handling HABs grew. That plan will be implemented as District policy this year, instructing team members on monitoring for, testing of and communicating about HABs.

When project personnel see a bloom in a reservoir, given away by the colorful scum in the water, they sample the recreation areas and send those samples to a lab to determine the species and cell count of the algae. The Department of Human Services, Office of Environmental Public Health then evaluates the data to determine whether a public health advisory should be issued. If the results exceed state guidelines for cell counts of toxigenic species, a health advisory is issued, cautioning the public to avoid contact with the water until the bloom subsides and the cell count decreases.

"Usually a harmful bloom is associated with a distinct blue-green color and cloudiness in the water," she said. "Water

One of two solar-powered long-distance circulators is placed into Willow Creek Reservoir as part of a pilot study to manage harmful algae blooms. The unit draws water from a specified depth and distributes it throughout the reservoir. This process mixes the specified layer of reservoir, disrupting blue-green algal habitat. *(Photo by Corps of Engineers)*

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contact should be avoided because toxins the algae potentially produce may be absorbed through the skin, or through ingestion of water, even as droplets or spray in the air."

Exposure to toxins released by these harmful algae blooms can produce symptoms of numbness, tingling and dizziness, which can lead to difficulty breathing or heart problems and require immediate medical attention. Additional symptoms of exposure to toxins include skin irritation, weakness, diarrhea, nausea, cramps and fainting.

Children are more at risk because of their size and the fact that they are more likely to accidentally swallow water. Pets are also at higher risk.

Besides water contact, the issue of eating fish caught in waters containing toxigenic cyanobacteria comes up often. Unfortunately it's not a cut-and-dry issue. Catch-and-release fishing is very low risk, although the potential for contracting skin irritation still exists.

If fishermen choose the more moderate risk of eating fish they have caught, they should remove the skin and organs, since toxins mostly accumulate there. A phone call to ODHS is the best way to make informed decisions regarding each specific case.

The uncertain nature of HABs makes them difficult to manage and even harder to prevent. No two blooms act alike and trying to predict them is often futile. Increased human influence, such as urban runoff and greater inputs of nutrients and sediments into reservoirs greatly accelerates the decline in water quality that contributes to harmful algae blooms.

"Harmful algal blooms may develop and disappear within a matter of days, or they may continue for weeks or months," Connors said.

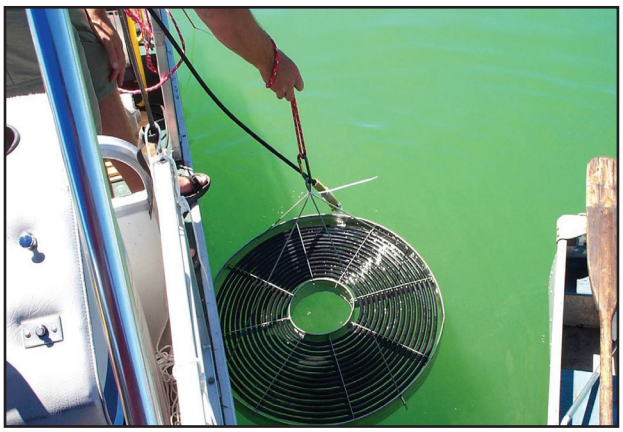
Willow Creek Reservoir struggled with multiple blooms last year, including some long-lasting blooms of three months or more.

The biggest recreational impacts have been Lost Creek Reservoir, which had large harmful algae blooms during the Independence Day holiday in the first two years the district has been monitoring the issue. The Rogue Basin Reservoir looked right on schedule for another bloom this Fourth of July, but the water cleared this year instead of clouding up with the toxigenic plants.

Aside from the monitoring program the district has implemented, team members are working with some cutting edge methods to manage the blooms. Aerators were used in Willow Creek Reservoir to mix the water throughout the reservoir from the bottom. The method improved oxygen levels in the reservoir, which HABs deplete, but also increased the water temperature in the reservoir, a condition that stimulates harmful algae blooms.

"Willow Creek is a consistent producer of algae blooms," said Jim Britton, water quality specialist for the Portland district.

This year a pilot study began at the reservoir using solar-powered long distance circulators to attempt to clear the prevalent HABs. The units draw water from specified depths and distribute that water throughout the reservoir. According to the manufacturer, this process mixes the specified layer of reservoir, disrupting blue-green algal habitat and diversifying aquatic organisms within the lake.



An aerator is dropped into Willow Creek Reservoir. The disk is weighted so it sits on the bottom of the reservoir and mixes the water, equalizing the temperature. This method resulted in improved oxygen levels, but created conditions that may have stimulated harmful algae blooms. *(Photo by Corps of Engineers)*

Unlike the aeration system used before, the long distance water circulators mix only the top portion of the reservoir, leaving the deeper, cooler, nutrient rich waters undisturbed. Beyond assisting with the district's harmful algae bloom issue, the research project is also an attempt to gain acceptance for the technology as a management method by the scientific community.

"There is really no silver bullet when it comes to preventing harmful algae blooms," said Kathryn Tackley, water quality specialist with the Portland district. "Lake management has been studied forever, and scientists are still dealing with chronic harmful algae blooms all over the world."

Managing reservoirs for harmful algae blooms is no easy task, especially when the problem is not fully understood by the scientific community. The impact to recreation in the district continually pushes team members to try various methods to eradicate HABs from Corps reservoirs. Trial and error and continual studies will serve to better understand and help work to solve the district's HAB problem.

Army Corps program: A cash cow for dairy

By JoAnne Castagna, Ed.D.
New York District

Caramel vanilla swirl, mint chocolate chip and vanilla fudge ripple are popular ice cream flavors that many of us are sure to savor, including New Yorkers who, while enjoying these delectable delights, are also being stewards of the environment.

New Yorkers who buy these creamy treats support milk suppliers who are participating in an innovative program in New York that's protecting the state's watersheds from pollution. The watersheds in upstate New York provide fresh water to millions of New York residents and businesses.

The Precision Feed Management (PFM) Program, funded by the U.S. Army Corps of Engineers, New York District, is working with New York dairy farms to implement cow feeding methods that are keeping the state's watersheds free of pollution. The program also is improving the quality of the farm's milk and increasing their profits.

In Delaware County, N.Y., the program is led by the Cornell Cooperative Extension of Delaware County along with a multi-agency team that includes the Corps' New York District, Delaware County, the New York City Watershed Agricultural Council and the Delaware County Soil and Water Conservation District.

The program is showing dairy farmers ways they can reduce the amount of phosphorous and nitrogen in their cow's feed. Phosphorous and nitrogen can run off into the water sources from cow excrement in the farm's soil. So far the program has reduced phosphorous and nitrogen levels in the watersheds with participating farms by more than 50 percent.

Dairy cows graze on a Delaware County dairy farm that's participating in the Precision Feed Management Program. *(Photo by Paul Cerosaletti)*

On all dairy farms about two-thirds to three-quarters of the nutrients from animal feed end up in the farm soil, where over time they can be lost to the environment if not managed properly.

For watersheds supplying drinking water, increased phosphorous and nitrogen in the water supply increases the growth of algae in the water, requiring more chlorination. Chlorination can create substances that can cause cancer in humans.

To reduce phosphorous and nitrogen in cow feed, the program encourages dairy farmers to create better feed mixes for their dairy cows.

Dairy farmers usually create feed by mixing commercially purchased feed with their own homegrown crop. Commercial feed is supplemented with high levels of vitamins and minerals, including phosphorous.

The program is showing dairy farmers how to create more balanced blends that contain less phosphorous.

One way they are doing this is by encouraging the farmers to purchase less commercial feed, which can be expensive, and grow more of their own home grown crop to feed their cows.

To grow their own feed, the program works with farmers to adopt crop production methods that are beneficial to the farms in many ways, including no-till crop planting.

This method eliminates the need to use gas guzzling machinery requiring expensive fuel. Tilling less soil also reduces erosion from the watershed of soil that may contain phosphorous and nitrogen.

This method also increases harvest production because it eliminates the need for several time-consuming tilling operations. Increased production yields more nutrient-dense crops for the cows, improving the quality of their milk.

Improved milk quality is something Hager Farms is experiencing with the program. Hager Farms, a 1,200-acre dairy farm in Delaware County, has been on the program since 2004 and produces milk that's sold throughout the state.

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farmers and the environment

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"The program provides our farm a computerized feeding system that gives us accurate information on the amount and type of feed that we put into our mixer and helps us monitor our feed inventories," said owner Ellen Hager.

The feeding system also helps her adjust rations so she is assured her cows are being well nourished, "Any change in any feed will affect the cows either positively or negatively," Hager said.

"We can also monitor a cow's health through monthly milk testing that the program allows us to perform. This also shows us how our cows are using our feed," Hager said.

Paul Cerosaletti, team leader, Delaware County, PFM Management Team, Delaware County, Cornell Cooperative Extension, is pleased that dairy farms, like Hager Farms, are benefiting from the program.

"When we started the program in 2000, we knew it would be a major challenge. We were asking dairy farmers to change the way they feed their cows, which can directly affect their farm's profit engine, milk production," Cerosaletti said.

"Feeding cows is a complex process because what they are fed determines the health of the cow and the quality of the milk they produce — it's a delicate area to be trying to change," Cerosaletti said. "We knew that if the farms experience one year of crop failure, while on our program, that they wouldn't want to adopt it."

To see what financial impact the program was having on the dairy farms, Cerosaletti and his team performed a study.

They compared the financial records of dairy farms of similar size in the same region that are not on the program

"Study results showed that "on average" the farm's operating costs to produce milk were $1.33 per one hundred weight of milk produced lower than the farms not on the program," Cerosaletti said.

"Typically farms' operating costs can range from $10-$18 per one hundred weight of milk produced, so $1.33 is a pretty good reduction in operating cost."

These farms are also producing more milk revenue.

"Dairy farms on the program are making on average about 1,400 pounds more milk per cow per year. Depending on what the milk price is, this may be worth $250 more in gross milk sales per cow per year," Cerosaletti said.

This is due to a number of factors including improved home grown feed quality and diet mixes.

According to Cerosaletti, dairy farms make up a large percentage of the farms in upstate New York and presently almost 50 out of the 200 dairy farms in Delaware County are on the program.

Dairy farmer, participating in the Precision Feed Management Program, feeding his cows their feed ration.
(Photo by Paul Cerosaletti)

The program is growing steadily and he attributes much of this success to the program's team of devoted individuals who are out in the field working closely with dairy farmers so that they succeed.

One of the major ways the team educates dairy farmers is by holding monthly "farmer-to-farmer" learning group workshops that serve as a support group for the farmers.

"The PFM people helped us to see where we may have not been as attentive as we should be," Hager said. In a business that is environmentally sensitive, we need to pay close attention to all aspects of farming. New regulations are coming frequently, so the resource of the program has been great.

"It's important that other dairy farms in our area look past their cows and farmstead. When we're exposed to outside resources and tools, we can get a better idea of how our world around us works," Hager said.

"Delaware County is very rural and one can at times feel isolated. With this program we can come together and exchange ideas and protocols — whether large or small. When one doesn't look beyond your hills, one could easily lose touch with what the world is asking from us, not only as producers, but also as stewards of our land. Our world continues to grow smaller, so we need to be more aware of our neighbors, whether down the road, or in the next state," Hager said.

"The real strength of the Precision Feed Management Program is that by working with farmers this closely we're achieving quantifiable benefits for the environment and the farms — it's a win-win situation," Cerosaletti said.

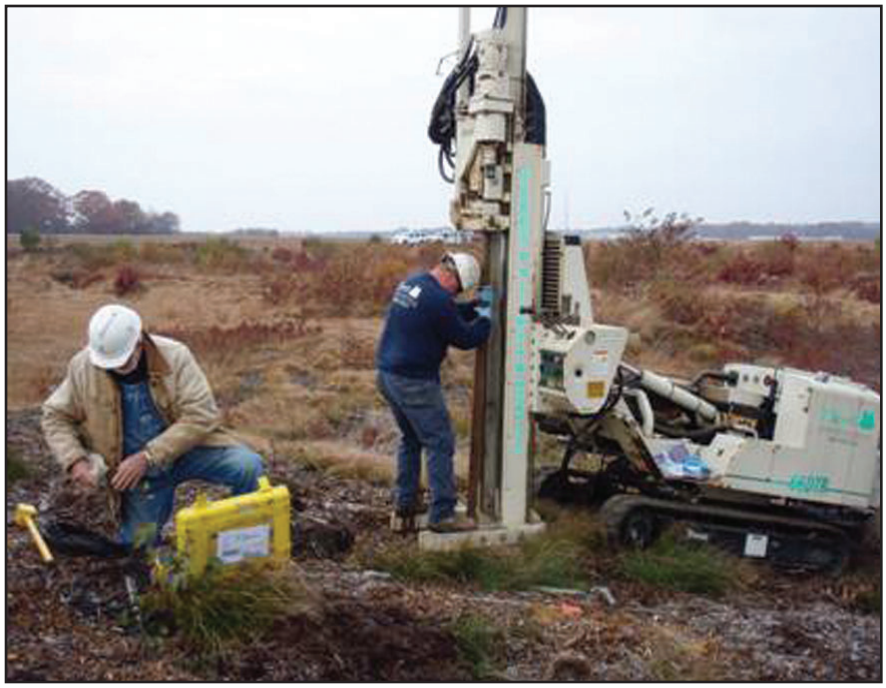
Site Inspection Program for Formerly Used Defense Sites meets significant milestones

By Jenny Stripling
Huntsville Center

With 287 of 765 Formerly Used Defense Site (FUDS) investigations complete, the U.S. Army Corps of Engineers is on its way to meeting the goal of having all FUDS Military Munitions Response Program (MMRP) Site Inspections (SI) completed.

The SI Program is required by the Department of the Army (DA) to complete 962 site inspections before the Sept. 30, 2010, deadline. Corps headquarters, in turn,proposed to DA that it will finish 765 site inspections by Sept. 30, 2010, which is the number of active projects listed in the 2004 Annual Report to Congress.

Brad McCowan of the U.S. Army Engineering and Support Center, Environmental and Munitions Center of Expertise, the SI program ma in Huntsville, is the SI program manager for FUDS. He tracks metrics and milestones and reports status to Corps headquarters.



Workers install a temporary 1-inch groundwater well during a site inspection at The Naval Auxiliary Air Facility in Rhode Island a formerly used defense site. *(Courtesy Photo)*

"We met our goal of 134 Site Inspections for the 3rd Quarter of Fiscal Year 2008," McCowan said. "We have since completed our goal for the 4th Quarter of the Fiscal Year 2008."

The main objectives of the site inspection are to determine if the site poses a significant threat and whether a detailed investigation is needed, determine if an immediate response is needed and collect data that will be used to prioritize the site for future cleanup action, if required.

Each of the services within the Defense Department prioritizes each of the sites for cleanup by following the Munitions Response Site Prioritization Protocol (MRSPP), 39 CFR Part 179 dated Oct. 5, 2005.

"MRSPP scores are to be initially completed during the Site Inspection phase. The completion of the MRSPP will enable the Department of Defense to focus efforts and limited funding on the highest priority sites," McCowan said.

These site inspections are being performed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process that's being used by all of the MMRP sites in the FUDS program.

CERCLA, commonly known as Superfund law, was established by Congress on Dec. 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA follows a phased process.

A FUD site considered to be a success story in the making has been that of Pinecastle Jeep Range in Orlando, where more than 100 pounds of World War II-era bombs and munitions were unearthed from the grounds around Odyssey Middle School. The school was built in 2001 atop the northern half of a jeep track that had been used for gunners' target practice.

"Pinecastle was originally identified as a site with higher priority as part of the SI team's efforts," said Deborah Walker, deputy SI program manager. "If you think about it, those munitions might never have been found if we had not been doing the site inspection."

According to McCowan, completing the Site Inspections by Sept. 30, 2010 ensures the Army and other services will be able to see the big picture and prioritize the MMRP sites with a higher confidence that cleanup efforts are being conducted on a worst first basis.

Headquarters creates Sustainable Design, Development Directory of Expertise

By Harry Goradia
Savannah District

Headquarters, U.S. Army Corps of Engineers (HQUSACE) has created a Sustainable Design and Development Directory of Expertise at the Savannah District.

The SDD DX will be supported by the Center for the Advancement of Sustainability Innovations (CASI) at the Engineer Research and Development Center, Construction Engineering Research Laboratory as an element for technology support and collaboration with the U.S. Green Building Council and other organizations engaged in research and development for future tools.

The SDD DX consists of the following individuals: Judith Milton at Savannah District, 912-652-5441, Richard Schneider at ERDC-CERL, 217-373-6752 and Annette Stumpf at ERDC-CERL, 217-373-4492. The HQ proponent for SDD is Harry Goradia, 202-761-4736.

SDD DX will maintain technical expertise in the rapidly changing and evolving area of SDD including criteria and requirements, Leadership in Energy and Environmental Design rating tools and emerging technologies to achieve SDD goals.

It will support HQUSACE in the development of criteria, research and development, and technology transfer. It will provide planning, design and construction support services, training and advisory assistance to others on a a reimbursable basis.

Upon request, the designated DX is capable of providing the following functions for SDD and related matters:

- Training on philosophy, concepts and history of SDD.
- Training and consultation on implementation of LEED.
- Review of contract documents, Installation Design Guides and other documentation for inclusion of SDD.
- Interpretation of LEED credit requirements.
- Participation in planning and design charrettes.
- Assistance in government validation process.
- Development of technical guidance and specifications upon request by HQUSACE.

District Divers stand ready, ensure waterways are safe

By Dan Jones
Pittsburgh District

There is a small group of Pittsburgh District employees who view locks and dams from a different and potentially dangerous perspective … under water.

They are the district's dive team and their purpose is to inspect the locks and dams, ensure that they are safe and structurally sound, and support the repair party in building temporary dams for various project dewaterings.

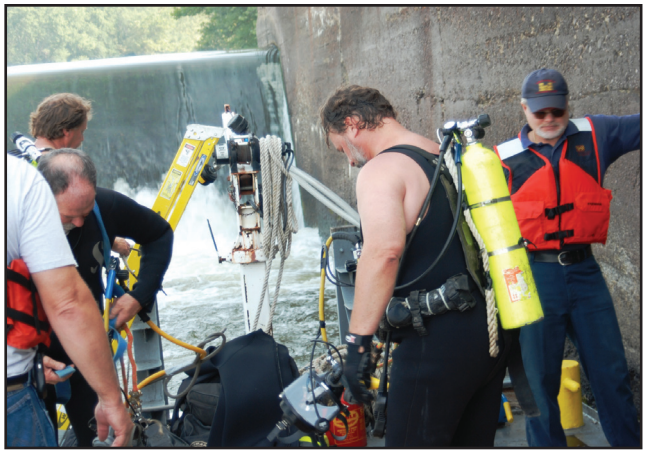
In addition, divers respond to emergencies at locks and dams, such as navigation accidents that impact lock gates, and removal of debris and other underwater obstructions that would impede the locks.

According to Gary Householder, District dive coordinator, the dams are inspected approximately every four years unless conditions warrant more frequent inspections.

"We schedule inspection dives to coincide with the division's maintenance standards and try to spread the dives throughout the year to keep divers proficient," Householder said.

Currently the District has 10 lock and dam divers, eight repair party divers and one diver-in-training.

Householder said that the dive team members are all volunteers who dive as a collateral duty



Everyone on board ensures the equipment is working properly.
(Photo by Dan Jones)

Dive team members Gordon Brown, Jim Paulick, Jim Morris and Householder recently completed a dive at the Allegheny Lock and Dam (L/D) 4.

"We were inspecting the dams for scouring, voids and any undercutting," said Brown, who has been diving with the Corps for 17 years.

Paulick said some dams have caverns that will go half way

See Divers page 13

New business practice cuts through red tape

By Amanda Ellison
Jacksonville District

Red tape. It's difficult to avoid its sticky snare; even more difficult to escape its entanglement. Wikipedia defines red tape as "a derisive term for excessive regulation or rigid conformity to formal rules that is considered redundant or bureaucratic and hinders or prevents action or decision-making. It is usually applied to government." Sound familiar?

Although red tape seems impossible to cut through, there is one team in the Jacksonville District that has succeeded in not only slashing it, but is helping other government organizations do the same with a new business practice that avoids the traps of red tape.

The business practice involves the use of new access agreements, and avoids the requirement of issuing a formal Right of Entry request. A Right of Entry gives the government permission to access private property for specific purposes, such as investigations for munitions or other contaminants on Formerly Used Defense Sites. Rights of Entry can be very restrictive, time consuming and mired in legalities that must be resolved before work begins.

The access agreement is a simple letter requesting access to property owned by other government entities and eliminates the need for the formal Right of Entry process.

The first use of an access agreement in the Jacksonville District was implemented for the Lake Bryant Bombing and Gunnery Range, a FUDS located in central Florida. The ranges are located in Ocala National Forest, on U.S. Forest Service property. Jacksonville District has an ongoing project at the Lake Bryant site and regularly needed access to accomplish a Site Inspection.

The access agreement was requested in April 2007; by May, the Corps was on site. Field work was completed in August 2007 and the final SI report was issued in March 2008. With this new method of a simple letter and permission from the U.S. Forest Service, the Corps was able to access the property and complete the work in an expeditious manner, saving the government both time and money.

Based upon the success of the access agreement at the Lake Bryant site, the Corps will use this simplified agreement with other federal agencies. There is an existing Memorandum of Agreement with the U.S. Department of Agriculture, which includes the Forest Service. Proven to be both effective and efficient at the Lake Bryant FUDS, the access agreement has successfully cut the red tape.

Bulletin reports on field test kits for environmental sampling

By Giselle Rodriguez
Engineer Research and Development Center - Construction Engineering Research Laboratory

The U.S. Army Corps of Engineers issued a new Public Works Technical Bulletin titled "An Evaluation of Field Test Kits for Environmental Sampling."

This bulletin identifies some field test kits available on the market and their effectiveness in identifying environmental contaminants.

Polychlorinated biphenyls (PCBs), heavy metals, petroleum, oils and lubricants (POL) and explosives are common contaminants Armywide. Quick decisions are often necessary in scoping an environmental emergency and determining an appropriate response. In addition, screening a large area (or large number of items) requires efficient tools.

A field test kit is used to determine the presence of explosives in a soil sample. *(Courtesy Photo)*

Commercially available field test technologies are often the best alternative for providing the user with a quick response. Potential uses include spill response, screening of recycling scrap or waste building materials, compliance, long-term monitoring and pre-screening of contaminated areas to determine future actions.

Modern technical approaches, such as the Triad for characterization and remediation of hazardous waste sites, encourage the use of real-time measurement technologies, including field analytical instrumentation. Some of the benefits of this modern approach are accelerated project schedules, cost reduction and improvement of project results.

This PWTB describes the most commonly used field testing technologies and instruments based on these technologies. Army examples where implementation of field testing technologies has saved operational costs and project time also are presented.

PWTB 200-1-61 can be downloaded from the PWTB page of the Whole Building Design Guide - Construction Criteria Base, http://www.wbdg.org/ccb/browse_cat.php?o=31&c=215

Divers

Continued from page 11

back the width of the dam.

To join the dive team, employees must be SCUBA (Self Contained Underwater Breathing Apparatus) certified. Once divers are certified, they must complete a four-week course in Key West, Fla., to receive their Corps Advanced Open Water Certification.

"The district usually has at least 15 divers at all times," said Paulick, a diver for 23 years.

"It takes at least a couple years for a diver to become really proficient," said Morris, a 19-year dive veteran.

Once their Corps certification is complete, divers must attend refresher training at Key West every four years.

"We are on call 24 hours a day," said Brown, a maintenance mechanic at Emsworth.

Although this can be a demanding duty, the divers seem to enjoy the job.

"Getting out and meeting people is one of the best parts of the job," Paulick said. "We don't do it for the money."

As the weather begins to cool down, their jobs are about to become a little more difficult.

One of the more difficult things the divers must adjust to is the transition from a wetsuit to a dry suit. Wetsuits are used during warmer weather and dry suits are used for cold temperatures.

"Dry suits are like an inner tube," said Paulick, assistant lock master and equipment mechanic at Monongahela River Lock 4. "They're fine if you are in the water, but if it is a 'warm' day during the winter and you are standing on the boat waiting to dive, it can get pretty hot."

Gary Householder, Gordon Brown and Jim Klanica watch the monitor for images from an underwater camera. *(Photo by Dan Jones)*

Paulick, who dove in five degree weather in January to check out a sunken barge at Braddock , said that when he got out of the water, everything that was wet immediately started turning to ice.

"Winter and the lack of air are the toughest things about diving," said Morris, an equipment mechanic at Dashields. "We are warmer in the water than the people on the boat. Everything is different under water," he said.

According to the divers, who can spend up to two hours in the water, everything is eight times harder to do under water such as using a jackhammer and removing debris.

With all of the hidden dangers associated with this job, safety is the number one priority.

"We wouldn't be able to do this without a total team effort," said Paulick. "From the boat operators to the support personnel, everyone is important."

Gordon Brown is hauled closer to the dam. *(Photo by Dan Jones)*

Partnership to provide campsites for extended care patients

By Miles Johnson, Tammy Moody and P.J. Spaul
Little Rock District

The U.S. Army Corps of Engineers and University of Arkansas for Medical Sciences (UAMS) entered an agreement July 29 to provide at least six new campsites in Maumelle Park to accommodate patients undergoing extended medical treatment in the Little Rock area.

The Challenge-Cost Share Agreement outlines how Little Rock District and UAMS will share in constructing and operating the new campsites. Maumelle Park has historically been an economical source of lodging for out-of-town patients who come to Little Rock for treatment.

"Throughout the past year, more than 81 people were documented in Maumelle Park as seeking long-term stays related to medical treatment," said Miles Johnson, the acting project operations manager of the Corps' Russellville Project Office. "The funding provided by UAMS will meet a definite need."

"Having these campsites available for extended periods of time will provide patients and their loved ones with an affordable option for lodging in a beautiful setting and at the same time help ease financial burdens."
— Dr. Peter Emanuel

Little Rock chief of operations Lee Bass and UAMS Chancellor Dr. I. Dodd Wilson, M.D., sign the Challenge-Cost Share Agreement between the Corps and the University of Arkansas for Medical Sciences to provide extended-stay campsites at Maumelle Park for long-term care patients. *(Photo by J.P. Jones, UAMS.)*

UAMS is providing $90,000 for the partnership to be led by its hospital, UAMS Medical Center, its Winthrop P. Rockefeller Cancer Institute and the UAMS Melanoma Institute for Research and Therapy.

"We see patients from around the world, many of whom must stay in Little Rock for weeks or months while undergoing treatment," said Dr. Peter Emanuel, director of the Cancer Institute at UAMS. "Having these campsites available for extended periods of time will provide patients and their loved ones with an affordable option for lodging in a beautiful setting and at the same time help ease financial burdens."

"UAMS is very pleased to partner with the U.S. Army Corps of Engineers to make these campsites available for patients," said UAMS Chancellor Dr. I. Dodd Wilson. "We are very appreciative of the support and compassion the Corps has shown in helping make this possible."

Current regulations limit the time individuals may stay in federal parks. UAMS funding will enable patients to enjoy extended, uninterrupted stays in the park, contributing to their recovery in a restful setting.

The Corps obtained seed money to be used for construction management, septic needs and daily utilities and maintenance. UAMS funds will provide for the remaining campsite building needs. The extended stay campsites will be reserved specifically for medical care patients as recommended through Patient Advocates Services of Little Rock Hospitals.

Maumelle Park is west of Little Rock, on the bank of the Arkansas River, on Pinnacle Valley Road off Arkansas Highway 10. The park's unique environment provides an excellent setting for camping, boating, fishing or getting away from it all. The park offers eight group picnic shelters and 129 campsites with electricity and water hook ups. Other amenities include a boat launch ramp, playground, hot showers, public telephones and a dump station.

Awards

Southeast Missouri Lake Project of the Year

By Nancy Dalrymple
St. Louis District

Wappapello Lake in southeastern Missouri near Poplar Bluff was recently recognized as the U.S. Army Corps of Engineers' Natural Resources Project of the Year. Lake personnel accepted the award from Lt. Gen. Robert L. Van Antwerp, Chief of Engineers, at a ceremony in Pittsburgh Aug. 4.

For more than 40 years the Corps has recognized excellence with its Project of the Year Award. The Corps operates and maintains more than 400 multi-use lake projects around the country and all are eligible to submit a nomination package. Wappapello Lake was first selected as the representative project for the Mississippi Valley Division before being forwarded to the headquarters panel for consideration.

Chief of Engineers Lt. Gen. Robert L. Van Antwerp presented awards to Wappapello Lake personnel at a ceremony in Pittsburgh August 4. Pictured from left are Van Antwerp, Gary Stilts, James Gracey, Eric Lemons, Rachel Lemons and Andrew Jefferson. *(Photo by Sean P. McCann)*

The award recognizes a project for its accomplishments in management efficiency, public involvement, public safety, management effectiveness and partnerships as related to all elements of the Natural Resources Management Program. The evaluation focuses on management efforts that contribute to greater efficiency and effectiveness in use of personnel and funds, while sustaining or improving good customer service and stewardship of project resources.

Gary Stilts, Wappapello Lake's operations manager, was ecstatic.

"The staff at Wappapello Lake are some of the most creative and innovative individuals I've worked with in my 26-year career with the Corps," Stilts said.

"All of our management decisions revolve around what is good for our visitors, the American taxpayer and the natural resources we are committed to being good stewards of," Stilts said. "The team has a lot to be proud of. This isn't just our award but it also belongs to all our contractors, volunteers, partners and the public that visit the lake. "

Another reason for pride at Wappapello Lake is the selection of park ranger Andrew Jefferson for the Corps' Hiram M. Chittenden Award for Interpretive Excellence. The Chittenden Award recognizes outstanding individual contributions in interpretation and environmental education by a U.S. Army Corps of Engineers employee in a district or field office. The award is based on the demonstrated creativity and originality, which enhances the public's understanding of the Army Corps.

Jefferson, an employee of the Corps for 24 years, was presented the Chittenden Award at the Aug. 4 ceremony. Jefferson was recognized for his efforts in leading the Interpretive Services and Outreach Program at Wappapello Lake. He was lauded for his accomplishments achieved through leveraging creative partnerships and engaging the community surrounding the lake.

He also was recognized for coordinating nine special events, cultivating relationships with local media, administering the lake's volunteer program, operating the Bill Emerson Memorial Visitor Center and spreading the Public Safety Awareness Campaign across the region.

"Andrew is one of our shining stars here at Wappapello," Stilts said. "He is a source of inspiration for the entire staff and proves that you can accomplish anything with passion and commitment."

Jefferson also will be recognized by his peers in November at the Annual National Association of Interpreters in Portland, Ore. A former resident of East St. Louis, Ill. He volunteered and then completed an internship with the Corps prior to receiving a bachelor's degree from Southern Illinois University at Edwardsville.

As part of the Project of the Year Award, Wappapello Lake received $25,000 to use on an unfunded item. Stilts said the plan is to build a picnic shelter at Redman Creek Beach.

Shift into ECO-Drive: 10 ways to save gas and reduce emissions

Alternatives to Driving — We all know sometimes you just need to meet face-to face, but consider alternatives to save fuel, reduce emissions and save travel time and dollars. Conduct meetings via conference calls or video conferencing

Car Pools — Look for - or start - a car pool to and from your office. While traveling on official business, car pool and share rides whenever possible.

GSA Cars — The Corps has a fleet of GSA-leased vehicles that employees may use while on official business.

Slow Down — Obey all traffic laws. By slowing down, you save gasoline and reduce emissions. For every mile per hour faster than 55 mph, fuel economy drops by about 1 percent. The drop-off increases at an even greater rate when driving more than 65 mph.

Smooth It Out — Avoid fast starts and try to keep rolling by looking far ahead and slowing down so you don't have to come to a complete stop.

E85 — Some vehicles are flexible fuel vehicles that can run on E85, which is a mix of 85 percent ethanol and 15 percent gasoline. A list of stations that carry ethanol can be found on the Web at: http://www.e85fuel.com/index.php.

(Check the owner's manual of your personal car to see if you can use E85.)

Don't Top Off — Don't top off the tank when refueling. The gas nozzle automatically clicks off when your gas tank is full. In areas of ozone non-attainment, gas station pumps are equipped with a vapor recovery system that returns overfilled gas and vapors back into the gas station's tank.

Ozone Action Days — When possible, avoid refueling on ozone action days, or if necessary, refuel after dark on ozone action days.

Check the Tires — Periodically check the air in your vehicle's tires. Underinflated tires can cut fuel efficiencies by 2-3 mpg or more.

Service — A car in need of service will use more fuel. For instance, replacing a clogged air filter can increase your mileage by up to 10 percent. You can improve your gas mileage by 1-2 percent by using the manufacturer's recommended grade of motor oil.

For more tips, visit the Web at: http://www.epa.gov/Region3/ems/facility/top-ten-things.pdf

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